

## OLYMPIC COAST NATIONAL MARINE SANCTUARY

A REPORT FOR SANCTUARY ADVISORY COUNCIL MEMBERS

REPORTING PERIOD: JULY 25, 2014 – SEPT 25, 2014

### ABOUT THE SANCTUARY

Olympic Coast National Marine Sanctuary spans 3,189 square miles of marine waters off the rugged Olympic Peninsula coastline. The sanctuary extends 25 to 50 miles seaward, covering much of the continental shelf and several major submarine canyons.

The sanctuary protects a productive upwelling zone - home to rich marine mammal and seabird faunas, diverse populations of kelp and intertidal algae, and thriving invertebrate communities. The sanctuary is also rich in cultural resources, with over 150 documented historical shipwrecks and the vibrant contemporary cultures of Makah, Quileute, and Hoh Indian Tribes, and Quinault Nation.

## OFFICE REPORT

### OLYMPIC COAST NATIONAL MARINE SANCTUARY NEWS AND PROGRAM UPDATES

Organized by Olympic Coast National Marine Sanctuary (OCNMS or sanctuary) management plan priority areas

### TREATY TRUST RESPONSIBILITY

#### State and Tribes Meet With Sanctuary to Discuss Habitat Framework

The Olympic Coast Intergovernmental Policy Council (IPC) met in Neah Bay in July to discuss the development of a collaborative habitat framework for the outer coast of Washington. The purpose of the framework is to establish criteria for identifying important habitat types, identify the location of such habitats and associated species, and identify priorities for management. A general scope of work was adopted and next steps identified including the formation of technical working group. The IPC is an important forum established to inform and cooperate in the management of Olympic Coast National Marine

Sanctuary, and consists of Coastal Treaty Tribes and the State of Washington.

## ACHIEVE EFFECTIVE AND COORDINATED MANAGEMENT

### Annual Meeting of the Northwest Association of Networked Ocean Observing Systems

Research Coordinator Ed Bowlby and Oceanographic Survey Technician Kathy Hough participated in a two-day meeting of the Northwest Association of Networked Ocean Observing Systems (NANOOS). NANOOS ([www.nanoos.org](http://www.nanoos.org)) is a regional association of the national Integrated Ocean Observing System in the Pacific Northwest, primarily Washington and Oregon. Sanctuary staff met with Jan Newton, NANOOS Executive Director, and Emilio Mayorga, NANOOS Co-chair for Data Management and Communications, focusing on how NANOOS could provide additional assistance (both short-term and long-term) with post-processing and distributing data collected from the Olympic Coast National Marine Sanctuary's (OCNMS) nearshore oceanographic moorings. A post-doc at University of Washington will be providing assistance to process and post data in a more timely fashion. The second day included a joint meeting of PIs as well as the Governing Council for NANOOS, consisting of stakeholders from agencies, academia, tribal, industry and NGOs.

## CONDUCT COLLABORATIVE RESEARCH, ASSESSMENTS AND MONITORING TO INFORM ECOSYSTEM-BASED MANAGEMENT

### RV *Tatoosh* Receives a Technology Upgrade and Support from Other NOAA Offices

The sanctuary's research and monitoring vessel *RV Tatoosh* was outfitted with permanent seafloor mapping technology that allows OCNMS to map whenever the opportunity arises or in the event of other types of emergencies in the Puget Sound area. During the 2014 field season the *RV Tatoosh* field crew mapped three sunken ships in order to determine potential salvage options and the extent of natural resource damage. Continued mapping of the Quillayute Needles was postponed due to equipment modifications that will continue during the remainder of the field season.

### **Sanctuary Mooring Program Receives Support From West Coast Governors Alliance on Ocean Health**

Olympic Coast National Marine Sanctuary (OCNMS) mooring program has received technical support through a NOAA Regional Ocean Partnership grant to develop its long-term dataset for enhanced exposure on the West Coast Ocean Data Portal, the Northwest Association of Networked Ocean Observing Systems (NANOOS) data portal, and the OCNMS web site. As a result of a survey conducted in June 2014, the oceanographic data collected by OCNMS has been identified as one of a select few West Coast projects to be further developed for publication on multiple web outlets. Technical support will begin with developing national standard metadata and will later include product development as the contract scope of work expands.

### **Annual Intertidal Monitoring Efforts Completed for 2014**

Olympic Coast National Marine Sanctuary (OCNMS) Resource Protection Specialist Liam Antrim and Hollings Intern Jessica Lindner completed two days of rocky intertidal monitoring at Multi-Agency Rocky Intertidal Network (MARINE) at sites Point Grenville on the Quinault Nation Reservation and one day of sand beach monitoring at Tsoo-Yess on the Makah Indian Reservation. Makah Natural Resource summer interns joined the beach monitoring to learn techniques of core sampling, wet sieving, organism identification, and beach profile measurement. The Makah summer interns also entered data into a database and were introduced to data analysis to compare 2014 findings with previous years. Long term intertidal monitoring provides baseline data for analysis of biological community trends and potential damage assessment following environmental impacts, such as a significant oil spill.

### **Collaborative Test of ADCP Deployment System**

Olympic Coast National Marine Sanctuary (OCNMS) and Center for Operational Oceanographic Products and Services (COOPS) collaborated on a test for a new Acoustic Doppler Current Profilers (ADCP) deployment and recovery system. On July 31 OCNMS and COOPS personnel recovered a new ADCP deployment and recovery system designed for deployment off of smaller research vessels such as the OCNMS's *R/V Tatoosh*. The six week deployment will provide data for analyzing the stability of the ADCP mount, providing data for updating tides and currents in the sanctuary, as well as providing data to the University of Washington for updating Pacific Northwest oceanographic models. This project also provided the opportunity to train OCNMS personnel on ADCP operations and data processing so that future data may be used by COOPS as well as OCNMS. Future data collected in OCNMS during the next four years will greatly enhance the accuracy of the current and tidal modeling of OCNMS waters.

### **Sanctuary, Washington State and Coastal Tribes Participate in Spatial Prioritization Workshop**

Olympic Coast National Marine Sanctuary (OCNMS) Geographer Nancy Wright attended Phase 1 of Washington State's Spatial Mapping Prioritization Initiative on August 7 with representatives from Quinault Indian Nation, Quileute Tribe, the Northwest Indian Fisheries Commission, and staff from WA Department of Ecology. Coordinated by NOAA's Biogeography Branch/National Center for Coastal Ocean Science, the Spatial Mapping Prioritization Initiative will help marine and coastal managers in Washington identify and prioritize seafloor areas of importance to map over the coming years as part of Washington's Marine Spatial Planning (MSP). Phase 1 of the Spatial Prioritization Initiative consisted of a pre-meeting to allow a technical team to establish basic guidelines for the prioritization workshop. Phase 2 will introduce resource managers to the concept and structure of the Spatial Prioritization online selection tool. Phase 3 will be the actual exercise of using the tool to select priority mapping sites on the Washington outer coast. Phase 4 will be the analysis of the findings. The prioritization of important areas to map over the coming years – derived from a consensus approach - will allow federal, state, and tribal managers to focus on a combined goal for this research topic.

## **IMPROVE OCEAN LITERACY**

### **Quileute Tribe Hosts Sanctuary Staff to Support Ocean Health Summer School Program**

Olympic Coast National Marine Sanctuary (OCNMS) Education and Outreach staff supported the Quileute Tribe summer school for kindergarten through sixth grade students at a one-day Ocean Health program. A combination of presentations, games and crafts engaged the students on local marine mammals, marine debris sources and effects on our ocean, and how our oceans health will affect us. The students loved being able to see skulls and skins of some of our local marine mammals, and the crafts and games supporting the ocean health theme.

### **OCNMS Welcomes First Washington Service Corps AmeriCorps**



Olympic Coast National Marine Sanctuary (OCNMS) welcomed new Washington Service Corps AmeriCorps, Danielle (Danny) Palmer, in early September. Danny will serve with OCNMS until July 2015, supporting OCNMS's marine stewardship volunteer programs in partnership with Washington CoastSavers and developing and implementing the North Olympic Watershed (NOW) Science Programs for 4th and 5th graders in partnership with Feiro Marine Life Center. Danny earned a BA degree in Environmental Studies and Global Studies from Pacific Lutheran University in Tacoma in 2012 and has served as an AmeriCorps VISTA at Susquehanna University in Selinsgrove, Pennsylvania. She is from Oregon and grew up exposed to marine and environmental

issues as her father was a Fish Hatchery Manager for OR Department of Fish and Wildlife. She is looking forward to being part of the sanctuary's environmental education programs.

### **Sanctuary Staff Supports Bremerton High School's Summer Enrichment Program**

Olympic Coast National Marine Sanctuary (OCNMS) Education Specialist Nicole Harris presented on ocean acidification to 40 students and 6 adults as part of a summer enrichment program for incoming 9<sup>th</sup> graders at Bremerton High School. Local environmental education organization NatureBridge Olympic partnered with OCNMS to provide marine focused education including plankton tows, an ocean acidification presentation in the sanctuary classroom and touch tanks at the Feiro Marine Life Center. Several students expressed interest in pursuing marine focused careers, finding inspiration to become creative problem solvers for the challenges facing our marine conditions.

### **Clallam Marine Resources Committee, U.S. Coast Guard and Sanctuary Staff Provide Oil Spill Activities for Students**

The Clallam Marine Resources Committee (MRC) summer oil spill intern provided a two hour oil spill presentation to 40 youth ages six to twelve and four adults at the Sequim Boys and Girls Club. The MRC intern provided background information on oil spills to the group and prepared them for subsequent speakers from the US Coast Guard (USCG) and Olympic Coast National Marine Sanctuary (OCNMS). USCG provided information on local oil spill cleanup and talked about the 370 oil spill calls they've responded to in 2014. OCNMS Education and Outreach Specialist Nicole Harris provided information on oil spill impacts on marine life as well as a hands-on oil spill activity, where the kids were able to create a plan and execute their clean up in a mock habitat. Students were able to observe the complexity of oils spill clean-ups, particularly when the oil spill is close to shore.

### **Olympic Coast National Marine Sanctuary Staff Celebrate Makah Days**

Olympic Coast National Marine Sanctuary Education Team participated in the 90th Annual Makah Days, held in Neah Bay, WA, August 22-24. The event brought thousands of people out to celebrate the cultural and maritime history of the Makah Tribe. Makah Days activities included traditional dancing and singing, as well as canoe races, a street fair and parade.



### **Olympic Coast Discovery Center Reaches Over 5,000 Visitors in 2014**

Olympic Coast Discovery Center (OCDC), the sanctuary's visitor center, provided interpretive information about the cultural and natural resources within OCNMS and sanctuary programs to nearly 5,200 visitors and locals day from Memorial Day weekend through Labor Day weekend 2014. During the 2014 season, a total of 18 docents volunteered 1,130 hours in the OCDC and for OCDC activities. OCDC will remain open on weekends through mid-October or by appointment.

### **Students Become Trained in COASST and NOAA Marine Debris Monitoring**

Six students enrolled in the Natural Resource Class at the North Olympic Peninsula Skills Center in Port Angeles were trained to monitor for Coastal Observation and Seabird Survey Team (COASST) and NOAA shoreline marine debris monitoring in September. Students from this class have been trained since 2012 to monitor the Elwha East and West sites on the Strait of Juan de Fuca by sanctuary staff Heidi Pedersen.

### OCNMS Facebook Photo Post of *Verella verella* Goes Viral



As reports poured in of *Verella verella* sightings along the Washington Coast, an Olympic Coast National Marine Sanctuary (OCNMS) volunteer sent in a photo of *V.verella* in sanctuary waters that was posted to OCNMS Facebook page. The photo was an instant hit, and over a few days, the photo went viral, bringing our weekly total reach to 996,133 people (up 5000% from the previous week). The photo grabbed the attention of several national media outlets including ABC News, the Huffington Post, The Weather Channel and the local Peninsula Daily News, as well as First News, an international kid's magazine produced in the UK. *V. verella* is a relative of jellyfish and coral, and is a free floating hydrozoan. It is common for

them to wash onto beaches or congregate in currents, and is subject to going where the wind takes them, as their common name "by the wind sailors" suggests. There have been many sightings of *V. verella* up and down the Pacific Coast in California, Oregon and Washington. While *V. verella* washing ashore is not an unusual event, the high numbers that we are seeing this year does appear to be somewhat unusual.

## CONSERVE NATURAL RESOURCES IN THE SANCTUARY

### Sanctuary Supports Makah Tribe's Summer Intern Program

The Makah Tribe hosts a summer intern program within their Fisheries Management Department through which high school students are engaged in research by assisting professionals on various aspects of natural resource management projects. The program's goal is to excite Makah youth about fisheries and environmental sciences so they are encouraged to pursue higher education in a related field and return to their tribal lands to be managers and scientists for the tribe. Olympic Coast National Marine Sanctuary provided funding assistance for an intern, with a focus on marine debris. The interns organized a community beach cleanup and tested new marine debris monitoring protocols under development by University of Washington's Coastal Observation and Seabird Survey Team. Interns also spent a day in the field assisting sanctuary biologists with intertidal monitoring at Tsoo-Yess Beach on the Makah Reservation. This is a long-term monitoring site for the sanctuary, where the interns learned methods and assisted with beach profile measurements, sediment grain size sampling, and identification of invertebrate species sieved from sediment cores.

### Washington Participated in International Coastal Cleanup

On September 20 Washington CoastSavers and partners, including Olympic Coast National Marine Sanctuary (OCNMS), led the state's second International Coastal Cleanup effort to remove marine debris from coastal beaches. The event took place in conjunction with the annual global event established by Ocean Conservancy in 1986. Up to 500 volunteers participated in cleanup efforts on 64 different beaches spanning from the Columbia River to Cape Flattery and along the Strait of Juan de Fuca, an increase from 140 volunteers in 2013. OCNMS staff coordinated volunteer efforts at Neah Bay's registration station for Hobuck, Tsoo Yess, Shi Shi, Portage Head, and Point of the Arches beaches. OCNMS is a founding member of Washington CoastSavers and contributes significantly to the organization's long-range planning, funding, and event coordination. Volunteers sorted through marine debris to support recycling efforts, and to collect clear plastic that will be used for a marine debris sculpture. At the end of the day, volunteers were able to relax and enjoy the beautiful weather at various barbecues, sponsored by Surfrider Foundation and DNC Parks and Resorts. The day was a great success due to volunteer dedication and strong collaboration between several organizations.



### Washington Conservation Corps Veterans Crew Beach Cleanups

A Washington Conservation Corps Veterans Crew covered 2.5 miles of remote shoreline between Scott's Bluff and Toleak Point from September 15-18 to clear lighter debris and consolidate large and heavy debris items into cache sites for removal by boat or helicopter. Sanctuary staff is coordinating with Olympic National Park and Washington Conservation to organize a removal operation in October from this wilderness-designated coastal area. The Veterans Crew performed the preparatory work of gathering large items, such as tires and large floats, at cache sites, which are as far as 6 miles hike from the nearest logging road.



## Scientists, Partners and Public Prioritize Marine Resources of Washington's Olympic Coast

In preparation for future management and research investments, scientists from National Centers for Coastal and Ocean Science (NCCOS) and ONMS have collected information from regional stakeholders and members of the public regarding Washington's Olympic Coast. Through focus groups, scientists learned from the general public which natural resources are most highly valued by residents of Washington. Additionally, scientists met with federal, state, tribal and local partners to develop mapping tools that can be used by natural resource managers, stakeholders and the general public to provide information that can be used to identify and prioritize marine areas for sea floor mapping. Both efforts will continue to collect scientific, social and economic data to support future management and research investments. These products support place-based management of local, regional and NOAA trust resources.

## UNDERSTANDING THE SANCTUARY'S CULTURAL, HISTORICAL AND SOCIOECONOMIC SIGNIFICANCE

### Olympic Coast Maritime Heritage Discussed

Office of National Marine Sanctuaries Maritime Heritage Program (MHP) Director James Delgado met with key partners to discuss maritime heritage in Olympic Coast National Marine Sanctuary. Meetings were held with Washington Department of Archeology and Historic Preservation, Grays Harbor Historical Seaport Authority, Olympic National Park and the Makah Cultural and Research Center. Cultural resource education and management were discussed, as well as a proposal in Congress to designate a Maritime Washington National Heritage Area.

## SANCTUARY PERMITTING

### Issued Permits and Approvals

**OCNMS-2014-005** – Ervin Joe Schumacker, Quinault Indian Nation

**Project Title:** Understanding Potential Impacts of Seasonal Hypoxia Along the Quinault Reservation Coast.

**Permitted Activity:** disturbance of the seafloor from deployment of up to nine instrument platforms constructed from commercial crab pots

**Project Location:** approximately 60 feet or less depth adjacent to the Quinault Indian Nation reservation coast; between the Moclips and Queets rivers

**Permit Duration:** 2 years, through November 1, 2016

**Comment:** Commercial crab pots with dissolved oxygen sensors will be deployed and periodically retrieved for data downloading. No anchor weights or other gear abandonment is planned. The Quinault Canyon is a location where oxygen-depleted waters upwell to initiate hypoxic conditions over shallower shelf and nearshore waters, which has caused animal mortality events.

**OCNMS-2014-007** – Christopher Macon, U.S. Army Corps of Engineers

**Project Title:** USACE National Coastal Mapping Program – LIDAR Flights.

**Permitted Activity:** low altitude overflight within OCNMS' overflight restriction zone with a minimum altitude of 1,200 feet above ground/water level

**Project Location:** coastal waters of OCNMS, north of the Copalis River to Koitlah Point in the Strait of Juan de Fuca.

**Permit Duration:** approximately 2 months, through September 20, 2014

**Comment:** LIDAR, or light detection and ranging, is a remote sensing technology used to make high-resolution imagery. The USACE study area includes 500m inland and 1000m over water along the entire Washington coast. This OCNMS permit only covers operations over sanctuary waters. USACE schedules LIDAR flights on a 5-year cycle to track changes in coastal geomorphology. Data are available to the public.

### Pending Permit Requests

**OCNMS-2014-003** – Joe Evenson, Washington Department of Fish and Wildlife

**Project Title:** WDFW/PSEMP Annual Winter Aerial Winter Survey of Marine Birds and Mammals

**Permitted Activity:** low altitude overflight within the overflight restriction zone of Olympic Coast National Marine Sanctuary

**Project Location:** over waters of the Olympic Coast National Marine Sanctuary between Koitlah Point and Cape Flattery

**Permit Duration:** to be determined; probably a 5-year permit.

**Comment:** This permit has not been processed because there are ongoing discussions about additional winter seabird survey work, and flights in Strait that this permit request covers are not planned until 2015.

**OCNMS-2014-006** – Brad Hanson, NOAA Fisheries NW Fisheries Science Center

**Project Title:** Determining the Distribution of Killer Whales and Other Cetaceans in the Coastal Waters of the U.S. Using Acoustic Recorders.

**Permitted Activity:** disturbance of the seafloor from deployment of 7 acoustic moorings and abandonment of anchor weights with annual instrument servicing

**Project Location:** 4 moorings approximately 3 miles off shore between the international border and Cape Elizabeth, and 3 moorings located in deeper waters of the sanctuary

**Permit Duration:** 5 years, through December 2019

**Comment:** This is research on the distribution of the Southern Resident killer whales off Washington's outer coast. Relatively little is known about the winter movements and range of the Southern Resident stock. Data from the proposed moorings will support evaluation of the outer coast as critical habitat for the Southern Resident killer whales. This research is supported by funding from the U.S. Navy. Proposed mooring locations were selected based on scientific needs and placement to minimize interaction with commercial fishing activity. Consultations were completed with Coastal Treaty Tribes and various non-tribal commercial fishing representatives.

**OCNMS-2014-008** – Evan Solomon, University of Washington, School of Oceanography

**Project Title:** Characterizing the Response of the Cascadia Margin Gas Hydrate Reservoir to Bottom Water Warming Along the Upper Continental Slope.

**Permitted Activity:** disturbance of the seafloor from collection of 3-inch diameter piston cores from the upper 9m of the sediment column

**Project Location:** near the Quinault Canyon

**Permit Duration:** October 10-19, 2014

**Comment:** Some core stations may occur in the sanctuary near the Quinault Canyon. Core stations will be within the 450 to 550 meter depth interval.

**OCNMS-2014-009** – Shawn Larson, Seattle Aquarium

**Project Title:** Fall-Winter 2014-2015 Aerial Survey of Washington Sea Otters, *Enhydra lutris*.

**Permitted Activity:** low altitude overflight within OCNMS' overflight restriction zone with a minimum altitude of 800 feet above ground/water level

**Project Location:** coastal waters of OCNMS, north of the Copalis River to Koitlah Point in the Strait of Juan de Fuca.

**Permit Duration:** October 1, 2014 through March 31, 2015

**Comment:** The planned flight path is from the Columbia River to the western Strait of Juan de Fuca. This permit covers only the portion of the proposed survey flight over sanctuary waters. The winter distribution of sea otters off Washington differs from their summer distribution and is poorly documented. Information on winter distribution will assist with selection of land-based observation sites for analysis of diet and energy budgets for this sea otter population.

## LEARN ABOUT YOUR SANCTUARY / NATURAL HISTORY

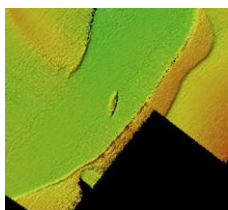
New information about resources in the sanctuary is always emerging. This section of the office report is reserved for sharing brief descriptions of recent studies, observations, findings, reports, and forecasts related to the sanctuary.

### Hypoxic Waters Noted in Southern Sanctuary Waters

On September 5 the sanctuary's oceanographic mooring team discovered low oxygen levels, or hypoxic waters, off Cape Elizabeth during a routine mooring servicing trip. Hypoxic conditions with oxygen levels <2.0 mg/l can be fatal to marine life in nearshore waters, in the past leading to massive fish and crab mortality off Washington. Additional instrument drops revealed hypoxic waters in waters between 15 and 42m depth between Moclips and Kalaloch, and near hypoxic conditions (2.0 to 2.5 mg/l) off Teahwhit Head and Hoh Head. Oxygen levels were closer to normal off Cape Alava and Makah Bay. OCNMS staff distributed findings to coastal natural resource managers and the hypoxia listserv organized by Oregon State University. Oceanographers from University of Washington distributed a data summary from the vertical profiler associated with the Cha Ba buoy off La Push indicating periodic influx of near-bottom hypoxic waters very closely related to but lagging slightly behind periods of consistent upwelling-favorable winds.

## REGIONAL / NATIONAL ONMS NEWS

## ONMS Shipwreck Surveys in Gulf of Farallones National Marine Sanctuary



regional shipwreck “graveyard”.

On September 12 Office of National Marine Sanctuaries (ONMS) staff Robert Schwemmer and James Delgado began a two-year survey of shipwrecks in Gulf of Farallones National Marine Sanctuary (GFNMS) in California aboard *Sausalito*. More than 300 shipwrecks are thought to lie within the area, some dating back to the era of the Gold Rush. The team was unsuccessful in locating the 1855 Clipper *Noonday* that sunk in 1863 using sonar and a ROV, but located and documented three shipwrecks lost at sea over 100 years ago. The team is also locating shipwrecks near the Golden Gate Bridge in this

## Final Port Stops of The *Charles W. Morgan*’s 38<sup>th</sup> Voyage



The *Charles W. Morgan*’s 38<sup>th</sup> Voyage continued with the final two official port stops in Boston and Buzzards Bay, MA in late July. The whaleship and dockside village were open to the public for 5 days in Boston with 15,940 visitors and 2 days in Buzzards Bay with 6,049 visitors who toured the historic vessel and explored the shore side attraction that included a ONMS and Stellwagen Bank National Marine Sanctuary (SBNMS) tent. During the two port stops 20 staff, volunteers, and Sanctuary Advisory

Council members from ONMS, Stellwagen Bank National Marine Sanctuary, National Marine Protected Areas Center, National Marine Sanctuary Foundation, and NOAA Fisheries Service provided the general public with information on local whale populations, whale research projects, and whale watching opportunities in the SBNMS. Over 60,000 people participated in the 38<sup>th</sup> voyage dockside village during the 24 days it was open this summer. The *Charles W. Morgan* returns back to Mystic Seaport in Mystic, CT in August where the dockside village will be set up for the last time to celebrate its homecoming. Built in 1841, the Morgan is a National Historic Landmark, the world’s only remaining wooden whaler and the last of an American whaling fleet that once numbered more than 2,700 vessels. Her 38<sup>th</sup> voyage promotes ocean conservation and recognition of our maritime pas, acting as an ambassador for the National Marine Sanctuary System and its role in whale conservation and ocean research. Educational panels of *Charles W. Morgan* are on display at Grays Harbor Historic Seaport Authority in Aberdeen, WA, a partner of Olympic Coast National Marine Sanctuary. For more information visit [www.mysticseaport.org/38thvoyage](http://www.mysticseaport.org/38thvoyage) and [sanctuaries.noaa.gov/missions/morgan](http://sanctuaries.noaa.gov/missions/morgan).

## Thunder Bay National Marine Sanctuary Celebrates Expansion

On September 5 NOAA released a final rule and environmental impact statement expanding the boundaries of Thunder Bay National Marine Sanctuary (TBNMS) in Lake Huron from 448 square miles to 4,300 square miles. A product of nearly seven years of scientific research and stakeholder input, the boundary expansion extends federal protection to an additional 100 known and suspected historic shipwreck sites. The sanctuary expansion was driven by strong support from Alpena and other northeast Michigan communities. In celebration of this historic achievement, the sanctuary hosted nearly 300 people at a community appreciation day at NOAA’s Great Lakes Maritime Heritage Center featuring interactive educational activities and honored guests including Senator Carl Levin, Dr. Jane Lubchenco and Dr. Robert Ballard. Representatives from each national marine sanctuary and national marine monument participated in the gala event, including OCNMS Superintendent Carol Bernthal.



## NEWS COVERAGE

### Peninsula Marine Life Center Losing Sea Stars to Mysterious Disease

Visitors to the North Olympic Peninsula’s two major marine science centers are likely to see few sea stars. Sea star wasting disease, which has decimated wild populations, is also affecting captive collections.

[www.peninsuladailynews.com/article/20140728/NEWS/307289990/peninsula-marine-life-centers-losing-sea-stars-to-mysterious-disease](http://www.peninsuladailynews.com/article/20140728/NEWS/307289990/peninsula-marine-life-centers-losing-sea-stars-to-mysterious-disease)

### **Warming Water Temperatures Could Be Driving Massive Sea Stars Die Off**

The rapid loss of sea stars along the U.S. West Coast may be caused in part by environmental changes such as increasing water temperatures, and not solely by a specific pathogen as many had previously thought.

[lincolncountydispatch.com/index.php/news/item/2767-warming-water-temperatures-could-be-driving-massive-sea-star-die-off](http://lincolncountydispatch.com/index.php/news/item/2767-warming-water-temperatures-could-be-driving-massive-sea-star-die-off)

### **The Case of the Missing Sea Star**

The U.S. West Coast is struggling to find the answer to the mysterious wasting syndrome that is killing off entire species of starfish in numbers alarming to scientists.

[www.oceanhealthindex.org/News/SeaStar\\_July\\_Newsletter](http://www.oceanhealthindex.org/News/SeaStar_July_Newsletter)

### **Ocean's Rising Acidification Eating Away at Shellfish That Coastal Tribes Depend On**

Ancestral connections of tribal coastal communities to the ocean's natural resources stretch back thousands of years. But growing acidification is changing oceanic conditions, putting the cultural and economic reliance of coastal tribes at risk.

[indiancountrytodaymedianetwork.com/2014/08/14/oceans-rising-acidification-dissolves-shellfish-coastal-tribes-depend-156395](http://indiancountrytodaymedianetwork.com/2014/08/14/oceans-rising-acidification-dissolves-shellfish-coastal-tribes-depend-156395)

### **New Life After Dam Removal: Surf Smelt Spawning in Mouth of Elwha**

Tiny forage fish lack the iconic status of Northwest species such as salmon or orcas, but the marine creatures at the bottom of the food web play a critical role. So scientists are excited to see signs that they are spawning in new habitat created by the Elwha dam removals.

[kplu.org/post/new-life-after-dam-removal-surf-smelt-spawning-mouth-elwha](http://kplu.org/post/new-life-after-dam-removal-surf-smelt-spawning-mouth-elwha)

### **Biologists Track Fish Recovery In Tough Conditions on Elwha River**

From sonar to snorkels, biologists are using a range of tactics to keep track of fish recovery under way on the Elwha River.

[seattletimes.com/html/localnews/2024180269\\_elwhafishxml.html](http://seattletimes.com/html/localnews/2024180269_elwhafishxml.html)

### **Back To Nature: Last Chunks of Elwha Dams Out In September**

The last dam will be blasted out of the Elwha River sometime in September, cementing the hopes of generations of advocates and tribal leaders who fought to make it happen.

[seattletimes.com/html/localnews/2024327922\\_elwharestorationxml.html](http://seattletimes.com/html/localnews/2024327922_elwharestorationxml.html)

### **A Visit to the Largest Elwha River Dam In Its Final Moments**

The National Park Service is in the final phase of the largest dam removal in U.S. history, taking place on the Olympic Peninsula. Just 30 feet of concrete dam stand between the Elwha River and its freedom.

[earthfix.opb.org/water/article/a-visit-to-the-largest-elwha-river-dam-in-her-fina/](http://earthfix.opb.org/water/article/a-visit-to-the-largest-elwha-river-dam-in-her-fina/)

### **Take A Walk Today On the Bottom of A Former Lake: Treasures Seen In Tour of Lands Once Inundated By Elwha Dam**

The now-dry bed of Lake Aldwell — no longer a bare moonscape as trees, grasses and other native plants sewn by both nature and man take hold — is waiting to be explored today.

[www.peninsuladailynews.com/article/20140826/NEWS/308269995/take-a-walk-today-on-the-bottom-of-a-former-lake-treasures-seen-in](http://www.peninsuladailynews.com/article/20140826/NEWS/308269995/take-a-walk-today-on-the-bottom-of-a-former-lake-treasures-seen-in)

### **Elwha: A River of Change**

As it winds through Olympic National Park, it doesn't take long to discover the character of the Elwha River is different, wilder.

[www.bellinghamherald.com/2014/09/06/3835117\\_elwha-a-river-of-change.html?rh=1](http://www.bellinghamherald.com/2014/09/06/3835117_elwha-a-river-of-change.html?rh=1) and

[http://www.thenewtribune.com/2014/09/06/3360034\\_elwha-a-river-of-change.html?sp=/99/1683/&rh=1](http://www.thenewtribune.com/2014/09/06/3360034_elwha-a-river-of-change.html?sp=/99/1683/&rh=1)

### **Fish Migrate Into Upper Elwha River For First Time In Century**

Olympic National Park biologists confirmed that two radio-tagged bull trout had migrated from the lower river through the former area of Glines Canyon Dam and reached at least as far as Rica Canyon above the former Lake Mills, some 15.5 miles from the mouth of the Elwha River.

[www.peninsuladailynews.com/article/20140908/news/309089976/if-you-missed-this-on-sunday-8212-fish-migrate-into-upper-elwha](http://www.peninsuladailynews.com/article/20140908/news/309089976/if-you-missed-this-on-sunday-8212-fish-migrate-into-upper-elwha)



### **Dams Removed, Chinook Spotted In Upper Elwha River**

Olympic National Park says that for the first time in more than a century, chinook salmon have been spotted in the upper reaches of the Elwha River following the recent removal of two dams.

[www.seattlepi.com/default/article/Dams-removed-chinook-spotted-in-upper-Elwha-River-5753358.php](http://www.seattlepi.com/default/article/Dams-removed-chinook-spotted-in-upper-Elwha-River-5753358.php)

### **Eyewitnesses Describe Birth of Orca in Puget Sound Waters**

The birth of an orca among the Southern Resident killer whales was both cause for celebration and greeted with concern. Orca infant mortality is high among wild populations and the overall population has fallen to its lowest level in more than a decade.

[blog.seattlepi.com/bigscience/2014/09/07/orca-baby-spotted-among-resident-puget-sound-killer-whales/#24619101=1&24619103=0&26269103=0&26269105=0&26539101=0](http://blog.seattlepi.com/bigscience/2014/09/07/orca-baby-spotted-among-resident-puget-sound-killer-whales/#24619101=1&24619103=0&26269103=0&26269105=0&26539101=0)

### **Newborn Killer Whale Spotted In Washington Waters**

Whale researchers are celebrating the newest member of a population of endangered killer whales that frequent Puget Sound in Washington State. The baby orca was spotted in waters off San Juan and is the population's first calf born since 2012, a member of the L pod.

[www.seattlepi.com/default/article/New-baby-orca-spotted-in-Washington-waters-5741687.php](http://www.seattlepi.com/default/article/New-baby-orca-spotted-in-Washington-waters-5741687.php)

### **Once Common Marine Birds Disappearing From Our Coast**

From white-winged and surf scoters to long-tailed ducks, murres, loons and some seagulls, the number of everyday marine birds has plummeted dramatically in recent decades. The loss of forage fish, such as herring, might hold a clue as to why.

[seattletimes.com/html/localnews/2024155783\\_birddeclinesxml.html](http://seattletimes.com/html/localnews/2024155783_birddeclinesxml.html)

### **Divers Seek Lost Crab Pots In Washington Waters**

Over 12,000 crab pots are lost in Washington state's Puget Sound every year, costing an estimated \$700,000 in lost harvest revenue and damaging the sea floor environment. Using sonar to find the pots, divers and scientists venture into the waters to clean up and learn why pots are lost.

[www.bellinghamherald.com/2014/09/04/3838169\\_divers-seek-lost-crab-pots-in.html?sp=/99/100/&rh=1](http://www.bellinghamherald.com/2014/09/04/3838169_divers-seek-lost-crab-pots-in.html?sp=/99/100/&rh=1) and  
<http://www.yakimaherald.com/news/lateststatenews/2486418-8/divers-seek-lost-crab-pots-on-puget-sound>

### **NOAA's Marine Debris Program Reports On National Issue of Derelict Fishing Traps**

Thousands of fishing traps are lost or abandoned each year in U.S. waters. A new NOAA report is the first of its kind to examine the derelict fish trap problem, nationally, and recommends actions to better manage and prevent it.

<http://www.sciencedaily.com/releases/2014/08/140827111950.htm>

### **How Fishing Makes You A Better Person (According To Science)**

Fishing is one of the most accessible outdoor sports. Nearly anyone, no matter age, income level or even fitness ability, can easily participate. Benefits include fitness, stress reduction and good nutrition from fish.

[www.huffingtonpost.com/2014/09/06/benefits-of-fishing\\_n\\_5754408.html](http://www.huffingtonpost.com/2014/09/06/benefits-of-fishing_n_5754408.html)

### **Study: Pacific Northwest Shows Warming Trend Over Past Century**

A study co-authored by Oregon State University climate researchers found that the annual mean temperature in the Pacific Northwest has warmed by about 1.3 degrees Fahrenheit since the early 20th century – a gradual warming trend that has been accelerating over the past three to four decades and is attributed to human causes.

[www.lincolncountydispatch.com/index.php/news/item/3153-study-pacific-northwest-shows-warming-trend-over-past-century](http://www.lincolncountydispatch.com/index.php/news/item/3153-study-pacific-northwest-shows-warming-trend-over-past-century)

### **UW Study: Despite 'Hiatus' In Rising Temps, Oceans Show Globe Still Warming**

Despite widespread concern about global warming, rising air temperatures have actually slowed down dramatically over the past 15 years. This so-called "hiatus" has posed a big puzzle for climate scientists.

[www.kplu.org/post/uw-study-despite-hiatus-rising-temps-oceans-show-globe-still-warming](http://www.kplu.org/post/uw-study-despite-hiatus-rising-temps-oceans-show-globe-still-warming)

### **'Warm Blob' Keeps Possible Record Sockeye Run Away From U.S. Waters**

In a development that has left local fishermen scratching their heads, it appears an unusually warm section of ocean water is helping send nearly the entire sockeye salmon run into Canadian fishing waters this season.

[www.bellinghamherald.com/2014/08/24/3815002\\_warm-blob-keeps-possible-record.html?sp=/99/100/&rh=1](http://www.bellinghamherald.com/2014/08/24/3815002_warm-blob-keeps-possible-record.html?sp=/99/100/&rh=1)

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### **Proposed Emergency Legislation Aims to Address Starfish Wasting Syndrome**

Most people from the Northwest associate the beach with tide pools full of brightly-colored starfish. But beachcombing has become less joyful over the past year. An epidemic known as sea star wasting syndrome has devastated huge populations of starfish.

[m.kplu.org/?utm\\_referrer=#mobile/18670](http://m.kplu.org/?utm_referrer=#mobile/18670)

### **Shellfish Tell Puget Sound's Polluted Tale**

Scientists used shellfish to conduct the broadest study to date of pollution levels along the shore of Puget Sound. In some places, it's pretty contaminated.

[earthfix.opb.org/water/article/shellfish-tell-puget-sounds-polluted-tale](http://earthfix.opb.org/water/article/shellfish-tell-puget-sounds-polluted-tale)

**WEB SITE** (<http://olympiccoast.noaa.gov/>)

**Follow the OCNMS, Facebook and Twitter!**  
<https://www.facebook.com/usolympiccoastgov>

*Please take a few moments to peruse the site. Your feedback is greatly appreciated.*

*Comments and suggestions can be sent to  
[Jacqueline.Laverdure@noaa.gov](mailto:Jacqueline.Laverdure@noaa.gov).*

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## **FUN, OCEAN-RELATED WEB SITES**

**National Oceanic & Atmospheric Administration**  
<http://www.noaa.gov/>

**National Ocean Service**  
<http://www.nos.noaa.gov/>

**Office of National Marine Sanctuaries**  
<http://www.sanctuaries.nos.noaa.gov/>

**NOAA Marine Debris Program**  
<http://marinedebris.noaa.gov/>

**NOAA Online Media Library**  
<http://sanctuaries.noaa.gov/photos>

**Encyclopedia of National Marine Sanctuaries**  
<http://www8.nos.noaa.gov/onms/park/>

**NOAA Ocean Explorer**  
<http://oceanexplorer.noaa.gov/>

**National Data Buoy Center**  
<http://www.ndbc.noaa.gov/rmd.shtml>

**Washington's Ocean Resources**  
<http://www.ecy.wa.gov/programs/sea/ocean/index.html>

**CoastWatch – West Coast Regional Node**  
<http://coastwatch.pfel.noaa.gov/>

**Northwest Association of Networked Ocean Observing Systems**  
<http://www.nanoos.org/>

**NOAA's Pacific Marine Environmental Laboratory**  
<http://www.pmel.noaa.gov/>

## Learn More About Your Sanctuary

The Sanctuary Office Report is produced bi-monthly by the Olympic Coast National Marine Sanctuary in conjunction with Sanctuary Advisory Council meetings. To learn more about the Sanctuary please visit our web site at: <http://www.olympiccoast.noaa.gov>.

To learn more about the Sanctuary Advisory Council please visit:  
[http://olympiccoast.noaa.gov/involved/sac/sac\\_welcome.html](http://olympiccoast.noaa.gov/involved/sac/sac_welcome.html)

### The Office of National Marine Sanctuaries

The Olympic Coast National Marine Sanctuary is one of 14 marine protected areas in the National Marine Sanctuary System encompassing more than 150,000 square miles of marine and Great Lakes waters from Washington State to the Florida Keys, and from Lake Huron to American Samoa. The system includes 13 national marine sanctuaries and the Papahānaumokuākea Marine National Monument. Visit the ONMS web site at: <http://www.sanctuaries.nos.noaa.gov/>

## Get involved!

To learn how to get involved in the Sanctuary visit:  
<http://olympiccoast.noaa.gov/involved/welcome.html>

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